The Role of the Defense Information Infrastructure Common Operating Environment (DII COE) in "dot-com-ing" the DOD

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Version 2

Theme Description

- DII COE was mandated in Aug 1996 to address:
  - Engineering integration (training, support, ease of use, etc.), and
  - User interoperability (e.g., sharing of information)
  - Arguments have been made that DII COE is outmoded and a drain on productivity and creativity
- What has to change in DII COE to provide value to the DoD?
- How does that align with the web paradigm?

Why is this important? (1 of 2)

- It is still mandated for C4ISR systems - we need to get it right
- Although it was the right thing at the time, the web has changed the calculus between integration and interoperability
  - so we must re-examine the DII COE structure and objectives

There is a compelling need for commercial standards and a military pay-off

- Expeditionary force concept of operations
- (Network centric warfare, Reachback capability)
- Total cost of ownership reduction through commercial alignment
- Training-ease of use for the user community

Business Obstacles (1 of 2)

- No sponsor for infrastructure
- DII COE is under-funded in comparison to the target programs (e.g., AWACS, TBMCS, JSTARS)
- DISA is under funded
- AF and Industry are underfunded
  - To meet the mandates
  - To support R&D, DISA working groups, and developer training

Business Obstacles (2 of 2)

- Sunk costs in legacy systems (old client/server relationships)
- Delay in testing and certification
- O/H for re-certification for S/W updates
- Commercial companies are less risk averse than DoD in the area of certification and testing
- Certification process requires flawless software versus evolutionary development
- Certification process requires complete description of COTS H/W - impractical
- Inability to change in "internet" time

Technical Obstacles

- Adding more and more standards stifles innovation (too complex)

- Compliance process slows delivery but DoD needs some assurance of product quality

- Not easy for developers to use
  - (Lack of maturity in tools)

Perception Obstacles

- Being behind N versions of a commercial product is perceived to be problem

- Doesn't help the end user, and isn't worth the cost

- DII COE is the current "Ada" or "POSIX"

- DII COE for the Air Force is different from the DISA DII COE

Business Enablers

- Need both DoD and industry leadership in the DII COE area
- Industry and government in some sort of consortium
- Financial incentives must exist for industry
- Having a business case for both DoD and industry
- Clearly identify the value added
- Create a reuse incentive
- Firm fixed price contracts provide incentives for reuse
- Profit-where are my spin-offs:how can it help the bottom line?
- Need CIO engagement
- Time is right to engage senior leadership (SECAF, CSAF and CIO)

Technical Enablers

- Abstracting the interface from the implementation
- Moving from standard products to standard interfaces
- Moving from products to interfaces defined by the Web paradigm
  - Internet Technologies are readily available to make it work
- Defining a new minimalist set of standards (must be open source)

Perception Enablers

- Better DoD and industry understanding of COE benefits
- Translate DII COE into dot-com language to attract and retain employees

Stretch ideas

- Consider removing the mandate and ask, "what would we lose or gain?"
- Outsource the infrastructure – government buys or leases the service
  - Service provider wrestles with choosing standard
  - Government specifies interoperability
  - Government specifies other desired effects
- Certify the infrastructure builder, not the infrastructure components (e.g., as in CMM and ISO 9000)
- Audit only the key parameters **(**ex: security**)**

Actions

- Move DII COE from Client-Server to Web paradigm
- Establish C2 Consortium
- Establish process to reallocate funds to buy infrastructure
- Mount DII COE education and training campaign

Tasks For a C2 Consortium

- Re-examine standards to produce relevant minimal set of mandates (possibly none)
- Incorporate web technologies to provide interoperability
- Recommend ways to improve products and processes
  - Better quality of tools
  - Streamlined certification
- Share investments (tools and R&D)
- Establish financial incentives for industry
- Create profit spin-offs (venture capital model)
- Establish business case for COE
- Leverage support of senior leadership (SAF, CSAF, CIO)